Wildlife

IN AUSTRALIA

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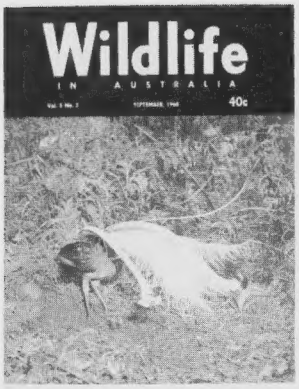

COVER PICTURE

SUPERB LYREBIRD

Australia has two species of lyrebird, the Superb and the Prince Albert. The Superb is the best known, being found along coastal eastern Australia from near Melbourne in the south to Stanthorpe district in Queensland.

The Prince Albert occurs from the Richmond River in New South Wales to the Blackall Range country in south-eastern Queensland.

Lyrebirds are birds of the forest country including rainforest. More details about the Superb lyrebird are given in the article on pages 85–86.

President	Judith Wright
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The Wildlife Preservation Society of Queensland is a non-profitmaking scientific and educational organisation centred in Brisbane. Through its official quarterly publication, WILDLIFE IN AUSTRALIA, it seeks to increase and disseminate knowledge of Australia's natural history, and in this way foster greater understanding of the urgent problems of conservation.

The Editors of WILDLIFE IN AUSTRALIA are constantly looking for articles and photographs on all aspects of nature and conservation in Australia.

At present no payment can be made for articles and photographs as all contributors give voluntarily their efforts for the cause of conservation.

Any opinions expressed in this periodical are purely individual and the Society does not hold itself responsible for them.

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All correspondence should be addressed to the Editor, Wildlife in Australia, Box 2030 , G.P.O., Brisbane, Q. 4001.

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DO YOU CARE ABOUT THE BARRIER REEF?

The Australian Conservation Foundation does. It believes that the Great Barrier Reef is one of Australia's great natural assets, of value to scientists, the tourist industry, the fishing industry and the mineral industry. Consistent with its belief in conservation as "the wise use of resources" the Australian Conservation Foundation believes that the Great Barrier Reef is a resource, to be used wisely for the benefit of all Australians. There are many ways of "using" the Reef, and only one of them is the exploitation of its mineral resources. The other uses are just as important, and should be given full consideration before any piecemeal development is allowed. We need to know a lot more about the Reef before we are in a position to determine the wisest use of this resource, and so the Foundation has stressed the need for a proper survey which will assess all aspects of the Reef, so that areas of value for science, tourism or fisheries will not be despoiled.

If you care about the Great Barrier Reef, you can help to ensure that such a survey is carried out, by supporting the Australian Conservation Foundation. **Membership is open to all — the annual subscription rates are Ordinary Member $5.00; Associate Member (juniors, students, or second members of a family) $2.50; and Member Bodies $5.00.** Members receive the Foundation "Viewpoint" series and a quarterly newsletter. More important, your membership will help to see that our natural resources are used with wisdom and foresight. **For further details write to the Director, P.O. Box 91, Eastwood, N.S.W. 2122.**

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Close-up of Wanderer at work digging for worms in the deep forest. This was the way I most frequently saw him.

A plea for conservation

In Western Australia we have several national parks extending to the sea and several coastal islands such as Rottnest Island which are sanctuaries for wildlife.

The dune landscape in these reserves seems safe from human destruction and although we have hundreds of miles of coastline we should not be too complacent about the safety of this coastal scenery.

We need to conserve more coastal areas for wildlife before they are destroyed by the sprawl of urban and industrial development so much of which is in the coastal zone in Western Australia.

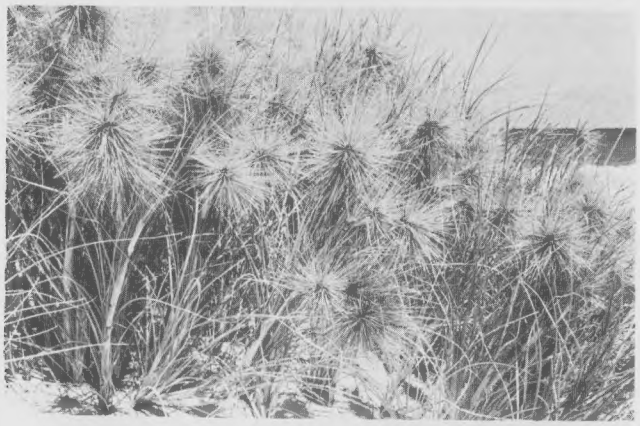
In the vicinity of Perth much of the coastal landscape has been irreplaceably disturbed by suburban development and where, twenty years ago one sea-side suburb was separated from the next by the welcome relief of dune-lands now we have miles of suburbia stretching unbroken along the coast, sprawled over flattened dunes down to the marine drive above the beach. Much the same is happening in other western sea-side towns.

Where nature has vanished we are so much the losers. Who wants to have to travel miles out of town to walk in the bush or study natural history? The rapidly increasing numbers of naturalists and students of formal biology need areas close to town for their field studies. The sand dunes provide beginners in biology with one of the simplest and most readily understandable lessons in plant sociology. Dunes close to Perth are the field laboratories of schools and the university for this lesson.

Town planning authorities would do well to break up the urban sprawl by reserving frequent areas of coastal bushland not with a view to later improvement as formal parks but to be left in the natural state to keep nature within easy reach of the people.

We still have the serene and spacious beauty of coastal landscapes near our homes but will we have it much longer?

This plea by Gordon Smith for the dunes of South-western Australia could be echoed for every State of Australia. Ed.



PLANTS OF THE SEASHORE

A WESTERN LANDSCAPE

by G. G. SMITH

University of W.A.

IF you have wandered amongst the sandhills by the sea and been fascinated by wind-sculptured sand, the pattern and textures of dune shrubbery you may have realised that in the dunelands, plants must battle with the elements and even the sea itself to colonise the sands down to the level of storm tides.

To be in the dunelands in a winter storm is to realise how harsh this environment is for plants. Storm tides erode the fore-dunes, sweeping plants into the drift. Sand-laden wind batters foliage and tender shoots, exposes the roots of one shrub and buries another. But when the calm of spring prevails the dune shrubbery puts forth fresh shoots and buried mat plants quickly thrust up a new mantle of greenery. Most of the shrubbery has survived the rigours of winter with only a severe pruning.

In the apparent wilderness of the dune landscape along the south-west coast of Western Australia there prevails an ecological pattern in the vegetation related to the topography of the dunes. This pattern is usually discernible from a high point in the dunelands from where it can be seen to consist of a zoning of the plants roughly parallel to the shore-line.

Firstly there is the *beach* or *strand*, then the line of low *fore-dunes* with their sparse cover of mat plants. The next zone is the system of *mobile* or *white* dunes, so characteristic of the coastal scene, with an infinite variety of patterns of sand and wind-shaped shrubbery. On the sheltered leeward side of the mobile dunes the shrubbery is more luxuriant and merges quickly into the zone of *stable dunes* where the plant cover of the sand is complete and usually heath-like.

This landscape pattern is an expression of the colonising powers of the species of bush plants of the hinterland and of the truly maritime plants such as the sea rocket which are confined to sea-shores and are incapable of competing with plants in a 'closed' community such as our bushland.

On the beach just above the reach of winter storm tides the sea rocket and dune arctotheca colonise the salty sand where few other plants could grow. Their low compact habits initiate an ephemeral dune-building as both species are annuals or at the best biennial. Being within easy reach of winter tides these colonisers are often swept away but are perpetuated by their abundant buoyant fruits being washed along the drift lines and blown up-shore where they germinate in vast numbers in late winter and spring.

1 SATIN-LEAFED ROLLING GRASS
2 BOOBIALLA
3 THICK-LEAFED HANDFLOWER
4 LONG-LEAFED ROLLING GRASS
5 KNOTTED CLUB RUSH

The makers of more permanent dunes are two perennial grasses, long-leafed rolling grass and satin-leafed rolling grass, both species of the genus *Spinifex*.

On the exposed coast satin-leafed rolling grass thrives in drift sand close to the sea. This long-lived grass builds the line of fore-dunes, its radiating shoots keeping pace with wind-borne sand checked by its erect, tough, hairy leaves. A dune of several yards diameter may be the product of a single plant.

This grass affords some shelter for plant colonists from either side of its dune, notably the mat plants and sea spinach from the mobile dunes and sea rocket and dune arctotheca from the beach.

Long-leafed rolling grass has much the same position and dune-building capacity on beaches of sheltered bays where the other *Spinifex* is rarely found.

Between the line of fore-dunes and the mobile dunes there is usually a depression where a few other species of plants find sufficient shelter to exist. The most common plants here are dune olearia, Cunningham's snowbush, Brown's snowbush, angular pigface, native geranium and the knotted club rush.

The mobile dunes rise steeply from this depression, sometimes to a height of eighty feet. These dunes are far enough back from the sea to allow a greater variety of plants to become established. The shrubs most abundant here are boobialla, thick-leafed hand flower, dune olearia, coast sword rush, cyclops acacia, long-leafed rolling grass. There are also large stands of sea-spinach, angular pigface and native geranium.

Most of these species have much water-storage tissue in their leaves. Leaf surfaces have either thick cuticle or are covered by a felt of hairs or scales. These characteristics are protective adaptations to long dry summers, and soil saltiness. They are also effective in reducing leaf damage by flying sand and salt spray.

The low shrubby habit of these plants arrests drifting sand but the scouring action of wind on their windward sides never enables them to completely cover the dunes. Only on the leeward side of the most landward line of sandhills does the plant cover become almost complete where the crest of this line of dunes has become stabilised by shrubbery.

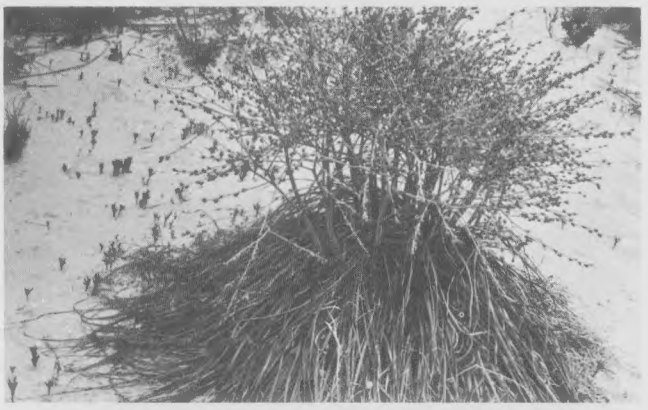
In the sheltered hollows between the mobile and stable dune systems the shrubbery becomes taller and thicker, mosses and herbs appear and the mantle of vegetation now completely covers the sand and extends over the old stable dunes in a low heath-like formation.

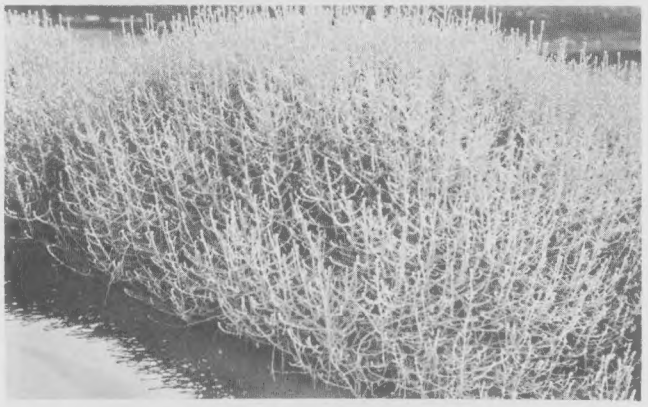
An analysis of the vegetation of the stable dunes shows that many of its species belong to the coastal woodland of the hinterland whilst the species of the mobile dunes are less frequent here or absent. In other words the coastal vegetation is zoned in its species composition according to the ability of the different species to withstand maritime conditions.

WILDFLOWERS

Perhaps you would not think the dunelands a place to find colourful wildflowers, but from late winter into early summer the dune shrubbery flowers in patches of brilliant colour.

On the beach the sea-rocket is a mass of lilac flowers in spring and early summer. The spinifexes are loaded



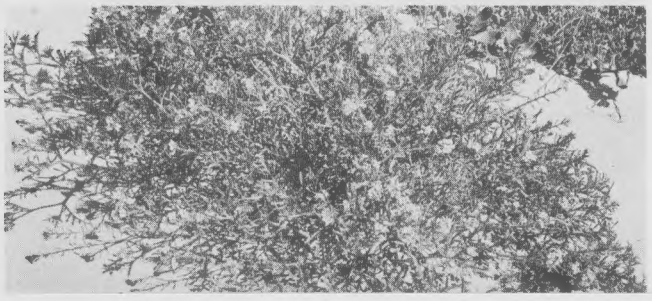


6 ANGULAR PIGFACE
7 COAST SWORD RUSH
8 DUNE ASPHODEL
9 SNOWBUSH
10 YELLOW RAGWORT

with their bristling green fruit heads which later will be seen rolling along the beaches in the summer wind. In late November the thick-leafed hand flower blooms thickly with sweetly-scented sky-blue flowers and the brilliant cerise flowers of the angular pigface shimmer in the midday sun. The flowering yellow ragwort spreads drifts of sulphur-yellow through the dunelands along with masses of pink flower heads of the native geranium.

By high summer most of this floral display is over but the succulent foliage of dune shrubbery then colours the landscape with subtle shades of grey-whites and sage, and with brilliant greens. The succulent leaves of the pigface change from sage to translucent pink and the tangled dodder laurel in the stable dunes is festooned over shrubs in a golden mantle.

For those who live by the sea the fragrance of the sandhills is memorable. The foliage of many dune plants is aromatic and on a hot day or after a shower of rain this fragrance is most noticeable. It is the spicy scent of dune olearia, the sweet scent of boobialla and the thick-leafed hand flower or the peculiar aroma of native geranium. This pot-pourri of scents is distinct from that of the eucalypt woodland for it is more sweet and yet more spicy than the all-pervading gum-tree aroma of much of the Australian bush.



A CORRIDOR OF MIGRATION

Most dune plants are adapted to their maritime environment to such an extent that they are unable to invade the heath of the stable dunes and can only spread along the mobile dune system. We might look upon this narrow strip of dunes about the Australian continent as a corridor of migration for these plants and for alien plants arriving on our coast and capable of establishing themselves in the dunes.

The maritime genus *Spinifex* has four species limited to seashores of Asia and Australia (the 'spinifex' of the arid interior of Australia belongs to the genus *Triodia*). Of the two species in Australia, the long-leafed rolling grass (*Spinifex longifolia*) extends from Java, Timor and northern Australia down the west coast to Geographe Bay. The satin-leafed rolling grass (*Spinifex hirsutus*) encircles the continent and extends to New Caledonia and New Zealand. Both grasses are thought to have a tropical centre of origin and to have migrated south along the dunes.

The sea rockets also migrate along seashores. Our sea rocket, *Cakile maritima*, is native to seashores of Europe, North Africa and Western Asia. This species was not recorded from western or southern Australia by plant collectors of colonial times and we can only conclude it reached our shores in some fashion after about 1900. Such a conspicuous plant, living as it does on beaches, hardly could have eluded those ardent collectors. Today the sea-rocket is abundant on our beaches because its fruits are carried along the drift lines by storm tides and wind-borne along the beaches and into the dunes.

A more recent migrant is the South African sea-shore plant, dune arctotheca which appeared on our coast near Bunbury about 1928. It has spread hundreds of miles both north and south of its landfall although it has not yet been recorded from South Australia. It is a most attractive weed and apparently non-aggressive as it shows no sign of invading the native bushland but continues its long migration about Australian shores by means of wind and water-borne fruits.

Another recent migrant from South Africa is the dune asphodel which, unlike arctotheca, is an aggressive species and has invaded large areas of dune shrubbery and coastal heath to the exclusion of native species. This prolific, onion-like plant is not particularly attractive and can be considered only as an undesirable alien. Fortunately for our sea-side native flora there are very few aliens which can survive the rigours of the dunes, whereas numerous alien weeds are fast choking the bush shrubs of the hinterland.

SCIENTIFIC NAMES

angular pigface	*Carpobrotus aequilaterus*
boobialla	*Myoporum insulare*
Brown's snow bush	*Calocephalus brownii*
coast sword rush	*Lepidosperma gladiatum*
Cunningham's snow bush	*Angianthus cunninghamii*
cyclops acacia	*Acacia cyclopis*
dune arctotheca	*Arctotheca nivea*
dune asphodel	*Anthericum divaricatum*
dune olearia	*Olearia axillaris*
knotted club rush	*Scirpus nodosus*
long-leafed rolling grass	*Spinifex longifolia*
native geranium	*Pelargonium capitatum*
satin-leafed rolling grass	*Spinifex hirsutus*
sea rocket	*Cakile maritima*
sea spinach	*Tetragonia zeyheri*
tangled dodder laurel	*Cassytha glabella*
thick-leafed hand flower	*Scaevola crassifolia*
yellow ragwort	*Senecio lautus*

11 DUNE OLEARIA

12 SEA SPINACH

13 DUNE ARCTOTHECA

14 SEA ROCKET

THE GOLDEN ORB WEAVER

(Family: *Argiopidae*. Genus: *Nephila*.)

By DENSEY CLYNE

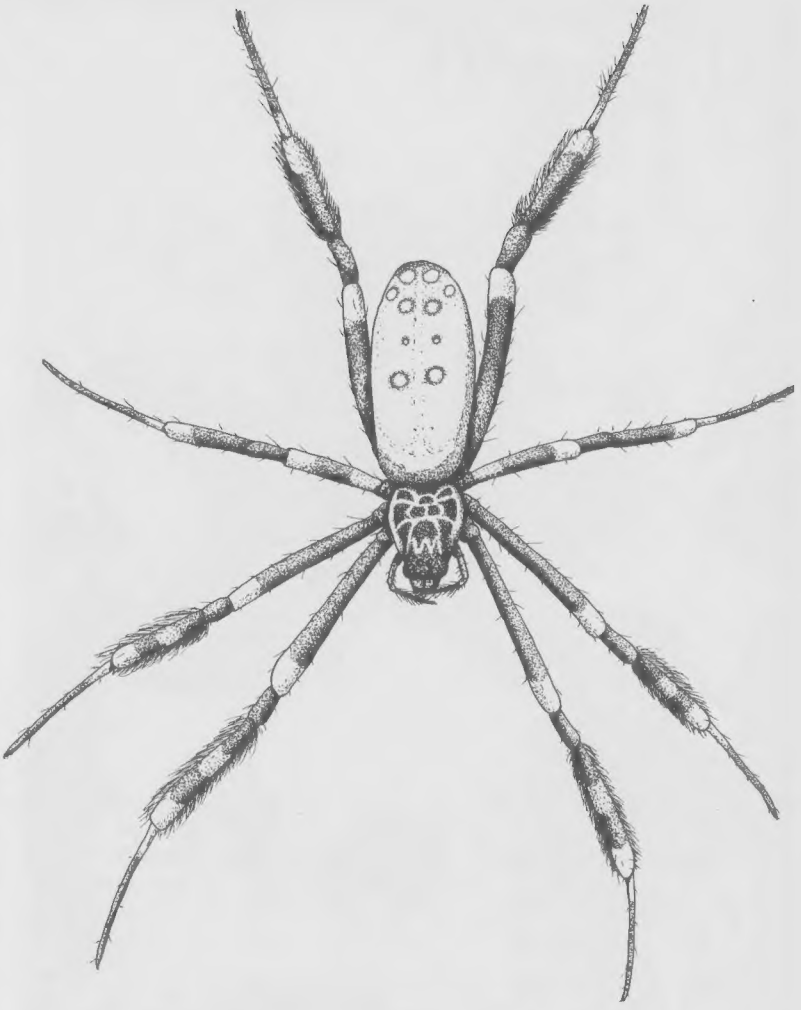
PEOPLE walking into the dense vertical web of the golden orb weaver usually bounce back a little, so strong is the golden silk used to construct it.

Fortunately for those who walk without seeing, the web is usually built high up, slung in the open from long, strong supporting threads. It is held secure by a number of guy-lines and a random network of silk on both sides, essential in such exposed situations.

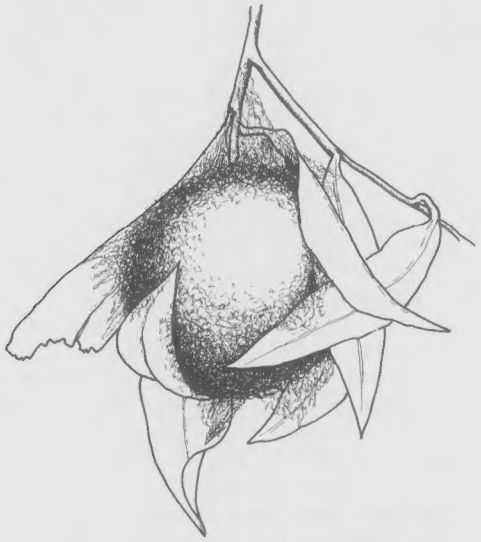
Most of the web is made with fine, golden silk. The spiral threads are arranged like musical staves — in groups of parallel lines with a gap between each group. But what looks like a gap is really filled by the colourless silk spiral laid down initially as a guide line when the spider builds her web. Most spiders, moving towards the centre of the web to lay down the "working spiral" of sticky silk, demolish this guide line as they go. Characteristically, the golden orb weaver leaves it intact, placing the rounds of golden silk very closely together in between. She is an untidy builder, and often the parallel lines form an irregular network rather than a neat spiral.

Another guide to identification of this spider is the strings of wrapped food particles hung up amongst the supporting threads like salami in the delicatessen shop.

There are several species of golden orb weavers. The female which is common in my own garden has a narrow, creamy-grey abdomen, spotted at the hind end, and striped below in black and yellow. The dark prosoma * is attractively patterned in light grey. The legs are banded black and yellow, and each tibia except the third pair has a brush of black hairs along it.



The Golden Orb Weaver (*Nephila* sp.). Female. Actual body size about 25 mm excluding legs.



The Golden Orb Weaver (*Nephila* sp.). Egg-sac.

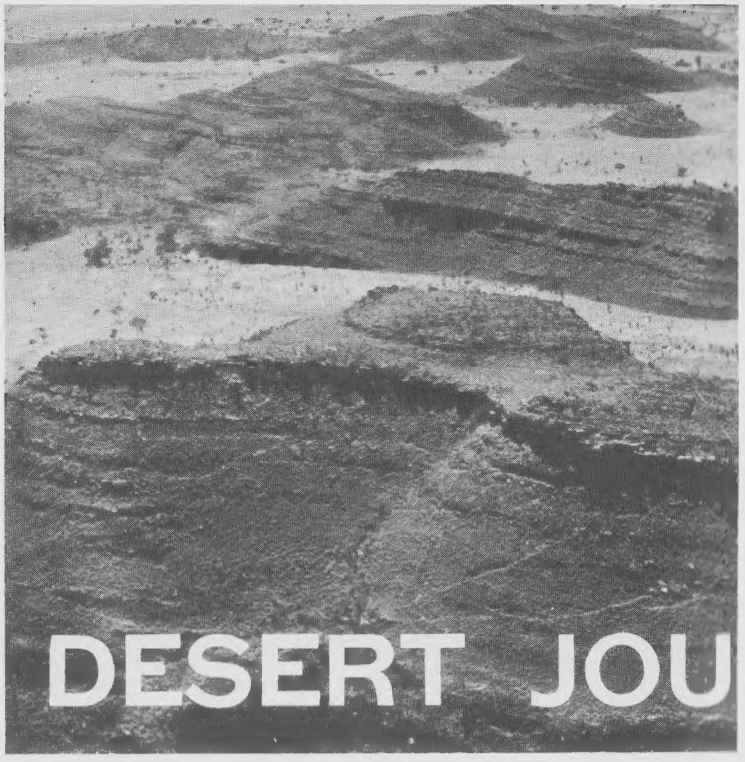
The spiders mature and mate in late summer and Autumn. The males, smaller than the females and not so strikingly marked, can be found in the upper part of the web of females which are either mature or about to moult for the last time.

By the time she is ready to make her egg-sac, the female's abdomen has become very large and rounded. Find one and keep her under observation until one day she regains her slim outline. If you follow the supporting threads of her web and search carefully near their points of attachment, you can usually find the egg-sac concealed amongst leaves. It is round and covered with a mass of fluffy, golden-yellow silk.

Young spiders can be found in spring in webs on bushes, and even at this stage they are readily identified by the tangle of silk lines supporting their small wheel webs, and the food particles strung up amongst them.

* prosoma: the front part of a spider's body. A spider unlike an insect, has only two parts to its body, the prosoma and the abdomen. The head is on the front of the prosoma.

In Geikie Gorge, the Fitzroy River.



DESERT JOU

By MICHAEL BECK

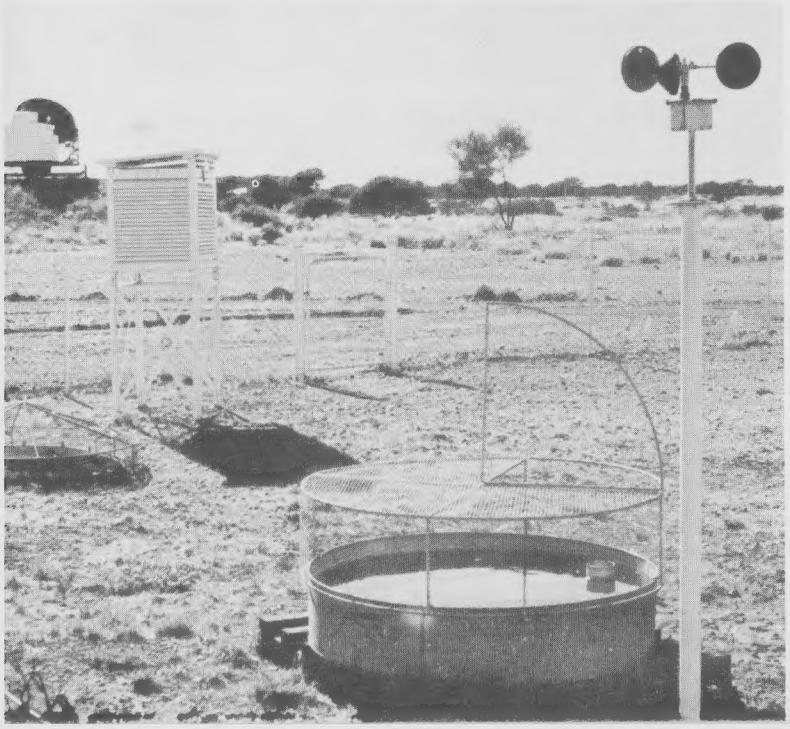
An unusual trip was made by a party of zoologists at the beginning of the summer. They flew around the vast deserts of Western Australia in a light aircraft, not at nine or ten thousand, but at 400 feet above the ground. At this height they calculated they would be able to see and record any signs of wildlife in this enormous and seemingly inhospitable area.

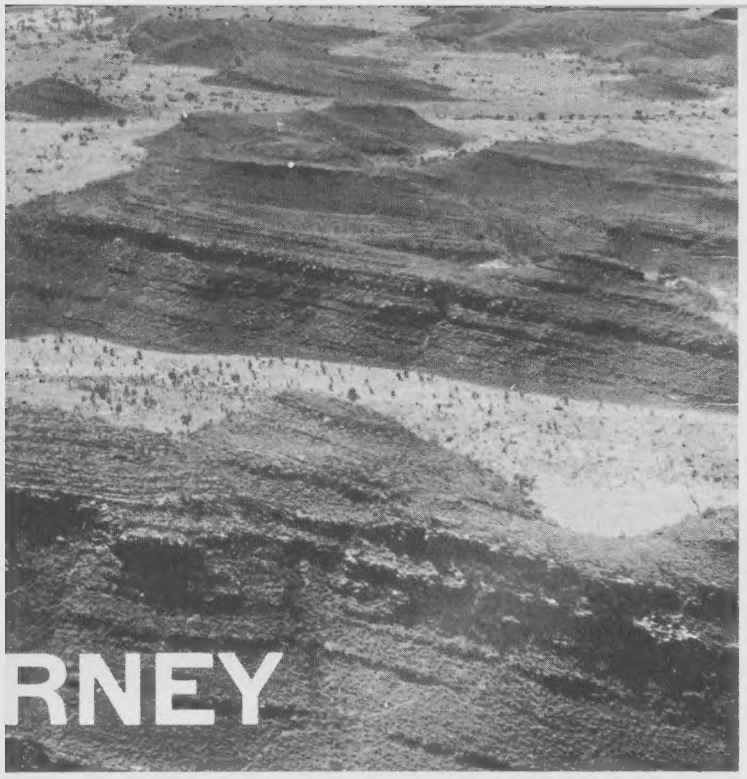
The party, led by Dr Stephen Davies, was made up from two of his fellow research workers of the CSIRO, a research scientist from the University of Western Australia and another from the Western Australia Agricultural Department—and of course, the pilot.

WE took off early in the morning and climbed high above the hills around Perth and headed east towards Laverton. From Laverton, we headed east for Warburton Mission. Not far out we sighted our first camel. These animals are very shy and although large are rarely seen on the ground. The camel is now very much a feature of the wildlife of the inland. Soon we were flying over Lake Throssel, a complex water system that would be a haven in the wet season, but was now a huge hand of gleaming salt, its fingers groping and winding through shallow valleys. We could clearly see camel tracks in the salt surface, criss-crossing the lakes, but no other sign of life until we found a water hole 200 miles west of Warburton. From our speeding aircraft we could see flocks of galahs and finches gathering to drink, but no evidence of other animals, not even a track. As the surface water recedes from the desert in the dry season, so the animals recede also; only birds with the ability to forage large distances each day for food can use the isolated water points that remain. Warburton Range had shown on the horizon by mid-day and we landed at the mission airstrip to be greeted by the mission superintendent, Dick Hawthorn.

We quickly realised that we were in the Aboriginal world now. No pastoral leases, no fences, no windmills,

Giles weather station and radar antenna for tracking balloons.





The King Leopold Range.

Patterns in the salt bed of Lake Throssel.

just endless hills and mulga. Few natives at the mission are westernised and we could only speak to many through an interpreter. They brandished their spears, rattling them in their woomeras for our benefit and laughed gleefully when we pretended alarm. The men, with their sun-polished faces and mud curls, told us which parts of the desert they came from, while their women folk stood back looking shyly at their toes digging the sand, or squatted on the ground to breast-feed large babies. They are a magnificent people, proudly living in their land the way they wish to live.

We visited the Brown Range just out from Warburton and saw parrots, galahs and finches feeding amongst the dry knee-high grass around the mission. We saw the red kangaroo and the inevitable rabbit and the exotic desert fig; the roots of this lush green tree embedded in the rock face of the range.

From Warburton, our destination was Giles weather station—but we flew north first, really into no-man's land with endless rows upon rows of sandhills wisping into the horizon. Stephen was 'navigating' from 'maps' that were just blank sheets—no landmarks, no names, a fascinating and exciting place to be in. Our thoughts went back to the early explorers, Giles and Carnegie, who crossed this same desert and must have climbed sandhill after eternal sandhill, only to see another on the other side. Twice in 300 miles we saw dense clumps of green mulga where perhaps water was close to the surface or had lain for longer than elsewhere but we saw no water now. We saw several 'small brown birds', probably hawks that feed on small animals and survive without water for longer than the seed-eating finches and parrots. We reached 'the lake', unnamed, but nevertheless marked on one of our maps where we had planned to turn and head back to Giles.

Giles weather station, although remote, is served regularly by the RAAF and the modern conveniences of cinemas and air-conditioning are available to the staff. In their leisure time they take a keen interest in their surroundings. They have a fine aviary of birds, mulga and Bourke parrots, cockatiels, budgerigars and zebra finches, caught close to the station; they have even made friends with a wild dingo which is a regular feature around the camp, sharing scraps with it's domesticated cousins.

We explored the Rawlinson Range, and marvelled at the flocks of spinifex pigeons with their whistling wings and irridescent colour, the wood swallows riding the air currents above the gorges, and enjoyed the peace amongst the river gums at their foot. We camped the night on the ground under the stars close to the range and awoke next morning to the chatter of thousands of budgerigars that sped in huge clouds from bush to bush, and bobbed and weaved to avoid a hawk looking for breakfast.

From Giles we flew north to the Granite's mine in the Northern Territory, again across sandhill after ceaseless sandhill. The Granite's mine, abandoned long ago, is isolated and seldom visited. The windmill is still working and the surrounding country has been declared a fauna reserve. We landed on the neglected airstrip, grass and potato bush brushing the wings. The granites are just that, a straggly heap of granite boulders lying like some ruined castle in the endless spinifex sandplain, and here we saw euros, the first kangaroos since Warburton. We noted the state of trees and shrubs and the birds we saw, as we had done at each of our stopping places and noted too, rock carvings that we found on the great granite boulders.

Our flight to Hall's Creek left the sandhills behind and we looked down on rugged rock formations and saw wild donkeys and horses gathered at water holes and billabongs. After we had climbed over the magnificence of Mount Brophy we saw cattle and we knew we were in the Kimberleys. From Hall's Creek we flew over the King Leopold and Muller ranges, with their pattern of scarps, valleys and peaks. Frequent rock holes filled with

Spinifex and gum trees near the Rawlinson Range.

water and signalled by flocks of pink and grey galahs were noted on our maps and soon we saw the dense green scar that marked the course of the Fitzroy River. Our pilot made for Geikie Gorge and we flew down it—the largest stretch of water we had seen for three thousand miles below us and the cliff faces of the gorge looming above our wing-tips.

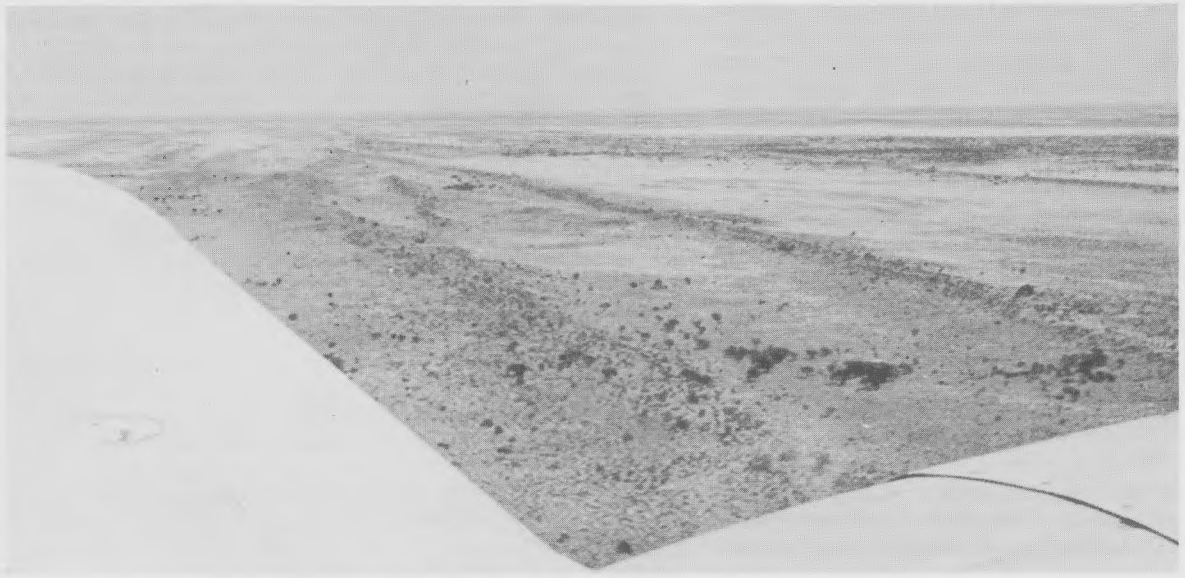
Leaving Fitzroy and the Kimberleys, we flew south-west across the great cattle stations of Fossil Downs and Gogo and out again into the sandhills of the desert. We saw another small group of camels not far from Lake Disappointment before we had to turn due west to refuel at Mount Newman. Mount Whaleback is a solid pinnacle of iron ore being probed and mined for industries of the world. A small township is growing on the stony flats that was once Mount Newman station. There was even a bus to meet us and the driver whisked us away to show us a ten-foot python that had been caught nearby—it was indeed a monster.

From Mount Newman we headed East and south to Wiluna. We crossed the Canning stock route marked by a chain of wells that stretch 870 miles from Hall's Creek to Wiluna. Beef roads and ships have now taken over from the old drovers, but the wells still remain as a monument to the pioneering days.

Wiluna is another gold town that has seen a wealthy and exciting past. Poppet heads still cast long shadows in the evening sun, standing like dutiful giants around the mine manager's splendid house. Nickel, now being sought in the area, may once more bring wealth and industry back to Wiluna. We stayed as guests of the Agricultural Department. They are experimenting with irrigation and cash crops at their field station close to the town and great strides are being made.

From Wiluna across the flat dry pan of Lake Monger to Perth, heralded by the green and brown check-board of the farming lands.

Sandhills as far as the eye can see.



Clyde River.
North Budawang Range,
just above the junction
of Yadboro and
Clyde Rivers.

THE NORTH BUDAWANG RANGE

SOUTH COAST, N.S.W.

DON ASHFORD

This mountain range covers about 300,000 acres and is a proposed and potential National Park area.

It stretches from Sassafras Mt. and Tianjara Trig (2,520 ft.) in the north; to Clyde Mountain (2,740 ft.) near Batemans Bay in the south; Currockbilly Mt. (3,711 ft.) in the west near Braidwood; and Pigeon House Mt. (2,361 ft.) and Talaterang Mt. (2,585 ft.) in the east.

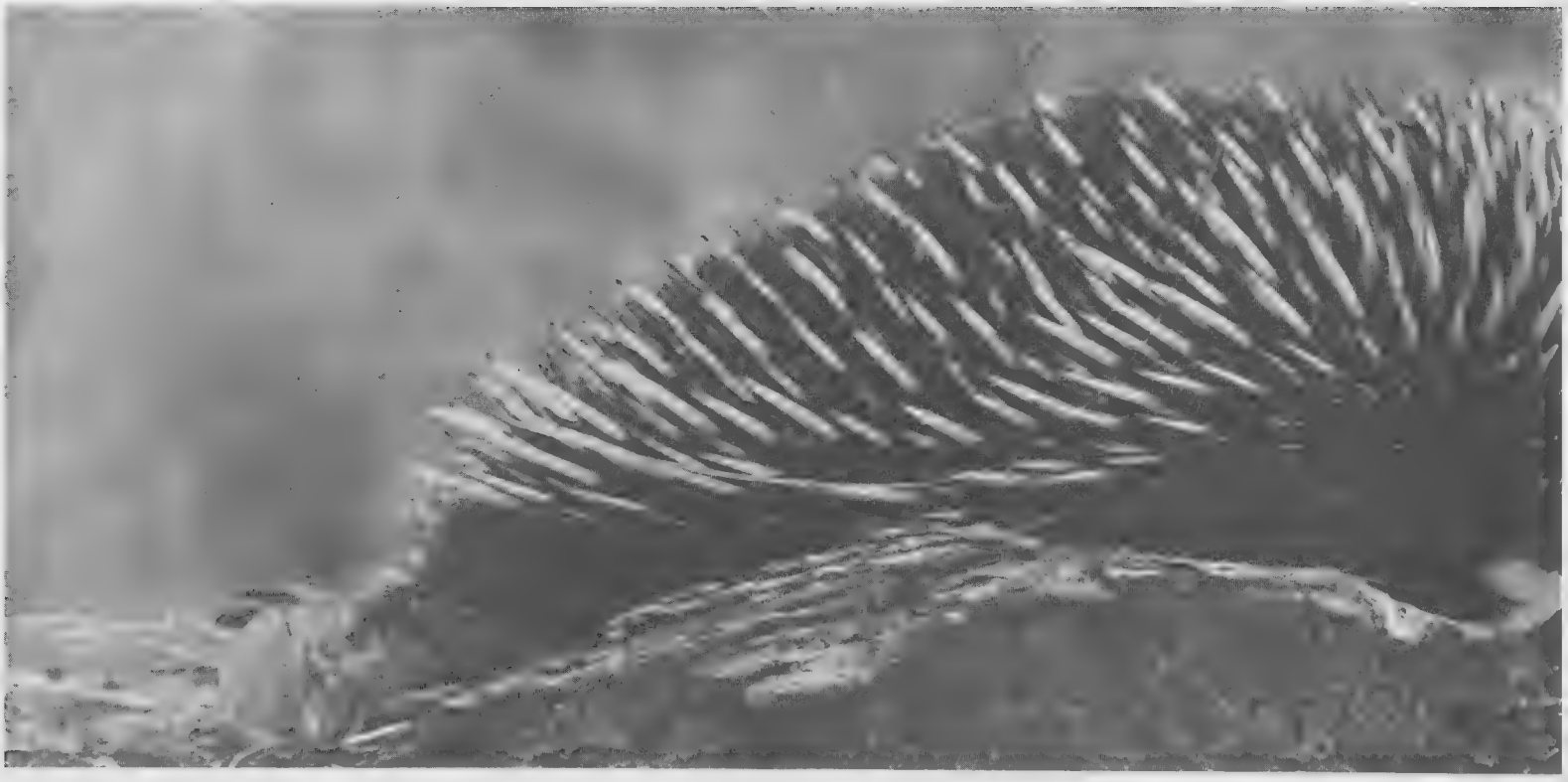
The Clyde River headwaters rise in a canyon near Sassafras Mt., 1,500 to 2,000 ft. deep, and empties into Batemans Bay. In the west rises Yadboro River, flowing into Clyde River, and Endrick and Corang Rivers.

The Castle (2,760 ft.) is in the centre of the range, and close by are Neibelung Crags, Shrouded Gods Mt., The Seven Gods Mt., Mt. Owen (2,890 ft.), Mt. Cole and The Donjan. Atop this double-cliffed edifice, which is flat topped, there are tarns filled with tadpoles.

The Monolith Valley nearby is a wonder on its own and of great beauty. Rounded weather-beaten domes and outcrops shaped oblong, circular, pyramidal enhances a strange valley.

The range mainly consists of conglomerate sandstone with the presence of rock intersected with many crevasses, rock ribs, natural rock arches, wind-eroded caves, rock chimneys, tunnels, and an Aboriginal bora ground.

The Castle.
North Budawang Range.



Inquisitive grey forester peers toward the author and the long lens.

Story and photographs by COL. ALLISON

THE SONG OF

THE GRAMPIAN MOUNTAIN RANGE of south-west Victoria is surely one of Australia's most interesting. Approximately fifty miles long by seven wide, the tall-timbered mountains and fern-laden valleys have much to offer the students of natural history and introduced fauna.

In my various forays to the region after article and book material it was no trick to locate and observe the larger animals such as grey forester kangaroo, wallabies, emus and the majestic European import, the red deer (*Cervus elephus*). The Grampians region is one of the few places on this continent where a tourist can tap you on the shoulder and say: 'There's a mob of deer down the road feeding in a clearing. If you hurry you should get a photo.'

The deer, found mainly in the Wartook valley, were liberated by the owners of Longerenong Station in the late 1860's. After a time the deer became too numerous and escaped into the mountains near Rose's Gap. For some reason or another (poor feed, lack of calcium, too much competition, etc.) the stags of the species have only produced antlers that a hunter would call trophy-potential on two or three occasions. Most Grampian stags are runts.

Deer have an attraction to hunters like no other animal. Poaching in the forest goes on and the occasional

Echidna found by the roadside. Wartook Valley.

Koala rests snugly in the back yard of the Hall's Gap Hotel yard.

THE GRAMPIANS

stag shot for antlers is found, though more generally a patch of blood is all that tells the story; local 'pot' shooters are the main offenders in this instance. The most deplorable story of all, perhaps, is the one of the stag dropped almost before the Hall's Gap publican's eyes one frosty morning. Before he could reach the culprit the antlers were removed and the vandal disappeared. The antlers of this big stag no doubt grace the walls of some eastern trophy 'hunter'.

The Wilson's of Longerenong may have lost their pets but the memory of this pioneering family is recalled each year toward the end of April. For it is then the big stags roar out their challenge to all comers with a throaty, lusty *Whhhggg ! Whhhggg !* repeated many times over. It is a sound to raise the hackles of the most worldly.

But red deer are only a small part of the wildlife in this area. Years ago the Fisheries and Game Department liberated five hundred koalas at Silverband Creek and they are now well established in the surrounding area. Visitors often sight them asleep in the gum tops and more than once the itinerant inmates of the Gap pub have piled out to view a little fur bundle dead to the world in the back yard.

If any animal in the sanctuary could be classed as extremely numerous it is the grey forester kangaroo. In places it is a motoring hazard and the sign, *Warning: Kangaroos next ten miles*, proclaims such. They are best observed at dusk and dawn as they graze the grass shoots on the forest fringes. Driving through Hall's Gap late one afternoon we were suddenly confronted with a mob of forty greys squatting nonchalantly in the centre of the road. The car horn was necessary to remove them: they merely hopped out of the way and watched our passage. Two big mobs make a daily attack on the grounds of the local hotel and this same mob is not infrequently fired upon by roadside vandals.

Early one morning I was sneaking across the front lawn of the pub towards seven 'roos feeding near a stand of blue gums. Suddenly I heard an excited: 'Hey you, stop! Don't shoot!' I couldn't work it out. By the time I did the kangaroos were gone, anyhow. The publican, a great lover of the things of nature and an inveterate magpie trainer, had mistaken the long barrel of my 640 mm Novoflex lens for a rifle! 'Thought you were going to stir my pets up,' he said.

The kangaroos are in such force that they often form two teams at the local footy field. Once, during a drizzling, uncomfortable day, I stalked in close enough for photography without tele-lens equipment. Such occurrences are rare these times.

The Grampians shelter over one hundred species of

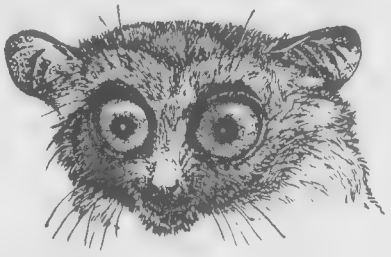
Tell-tale 'marks' of the red stag, a prolific breeder, are often all the visitor sees of this import. Fate often dictates that he who searches exclusively for such animals fails to locate them.

bird life. Apart from the perennial kookaburras, which keep the local snake population down, there are a number of cockatoos including the black and gang-gang, rosellas, the beautiful kingfishers, hawks, honeyeaters, bronzewing pigeons, Cape Barren geese and bell birds—to mention a few of the more interesting. And, in the more inaccessible crags of the western mountains lives the Lord of the Australian Skies—the magnificent wedgetail eagle.

Unfortunately this national bird is still frequently meted out an unjust fate on the western plains near the forest. Nesting high above the nearby sheep country, he is often shot as he dips and wheels in the cool air-currents looking for a rabbit morsel below. His carcase may often be found wired to fences just out of the sanctuary.

To my ears, the Song of the Grampians is a medley. It is the roar of the great fighting stags; the call of the night-owl; the whispering of wings as the hawks hover; the rustling of a chill wind through the cypress-pines; the hop, hop, hop of the kangaroos; the tinkle of the bell-bird; the thunder of plummeting waterfalls.

It is the Song that was once heard all over this great land. The Song has now died down to a whimper.



J. H. PRINCE'S

Animals in the Night

The first book produced for the general reader on this fascinating topic. ANIMALS IN THE NIGHT explains simply and clearly how the sense of animals enable them to live and hunt in the dark. Illustrated on every page. The author is a former research professor at Ohio State University. $4.00

AT ALL BOOKSELLERS

Published by Angus and Robertson

REVIEWS

ATLAS OF TASMANIA
Department of Lands and Surveys, Hobart.

This Atlas is an indispensable book for all Tasmanians and also for all naturalists who want a good summary of the State. The first eight chapters deal with climate, geology, landforms, soils, vegetation, animals and the Aborigines. The other chapters deal with aspects of primary and secondary industry and there is also a chapter on Outdoor Recreation.

KNOW YOUR NEW ZEALAND BIRDS
K. Westerskov. *Whitcombe and Tombs.* **$2.25**

This is a most unusual type of identification book designed for the 'new chum' to bird watching.

Habitat keys and other devices are used to make the beginner's task easy. In addition it has much additional information of great assistance to all naturalists. A work similar to this is needed for Australia.

AUSTRALIAN NATURE SERIES. *Longmans.*

Two more in this excellent series for use mainly in schools are

SAVING OUR WILDLIFE. Lois Sourry.

PLANTS WITHOUT FLOWERS. Thistle Harris.

This series is beautifully illustrated and invaluable for teachers and school libraries.

BIRDS OF AUSTRALIA
Stanley Breeden and Peter Slater. *Angus and Robertson.* **$5.50.**

The two authors of this book are well known to naturalists as masters of nature photography. In addition they have gathered magnificent prints from other well known naturalists and have produced a pictorial story of our birds which is a delight. There is an extensive text which deals with the birds and their environment. Peter Slater has used his own skill as an artist with some excellent drawings. An ideal gift book.

TREES OF THE AUSTRALIAN BUSH
Eric Worrell and Lois Sourry. *Angus and Robertson.* **$4.50.**

Books on our trees are not common and this new publication fills the gap very well. Eric Worrell's photographs taken on his extensive travels around Australia are skilfully combined with a strong text by Lois Sourry.

THE NEW ZEALAND SEASHORE
John Morton and Michael Miller. *Collins.* **$11.70.**

New Zealanders are fortunate to have this authoritative text for their guide along the seashores of the country. Beautifully illustrated, it is a must for all naturalists and teachers of biology.

A GUIDE TO AUSTRALIAN NATIVE PLANTS
A. M. Blombery. *Angus and Robertson.* **$15.00.**

This comprehensive and well-illustrated volume should be of great value to interested laymen. The first section, dealing with the structure, physiology and general classification of ferns and flowering plants should meet a long-felt need.

There is wide coverage of genera and species, with general descriptions and a considerable section on cultivation. The latter is obviously based on the author's own experience. The language is non-technical and clear. The general descriptions of the families are excellent; those of the species are rather inadequate, no doubt owing to lack of space. The selection of species described is similarly restricted, and shows some curious omissions, as well as the inclusion of a few rather obscure species. The line drawings of Margaret Senior, Betty Maloney and Eirene Mort (the latter reproduced from that valuable but out-of-date publication of Florence Sulman 'A Guide to the Wild Flowers of N.S.W.') add considerably to the value of this most useful publication.—T.Y.H.

PENGUINS
John Sparks and Tony Soper. *Angus and Robertson.* **$6.50.**

For the general reader who wants an accurate and interesting story of penguins this is the book to buy. For the ornithologist who wants his facts brought up to date and organised into a pattern it is a 'must'.

PLANTS OF PREY
Rica Erickson. *Lamb Publications.* **$4.50.**

This story of the animal trapping plants; the sundews, rainbow plants, bladderworts and pitcher plants of Australia is a model of what such books should be. With this any amateur naturalist will be able to identify all the Australian species. In addition there is a full discussion on the particular groups involved.

THE LYREBIRD
L. H. Smith. *Lansdowne Press.* **$5.50.**

Dr L. H. Smith, Director of National Parks in Victoria, has long been known for his interest in lyrebirds. In this new book he has presented a fascinating account of the bird. The first section deals with the lyrebird in history, in captivity and the long trail towards protection. The second section discusses the life history of the bird and some of the individuals which have captured public interest. The book has in addition a full bibliography very useful for ornithologists and photographs which are a delight.

NATIONAL PARKS
J. G. Mosley. *Nelson Doubleday. Around Australia series.* **$0.75.**

This is a new title in a series of attractively produced books. The text is simple but adequate to a general descriptive book of this size and gives a good coverage of the more important Australian National Parks.

THE AUSTRALIAN GREAT BARRIER REEF
Keith Gillett. *A. H. and A. W. Reed.* **$3.50.**

Australian Birds in Colour was the first of this series produced by Reed's. The quality of this book is at the same high level as the first. The amount of information and the beauty of the illustrations results in a very good coverage of the natural history highlights of the Reef. Keith Gillett has spent many years in the Barrier Reef area and in later issues we hope to be able to show some of his work.

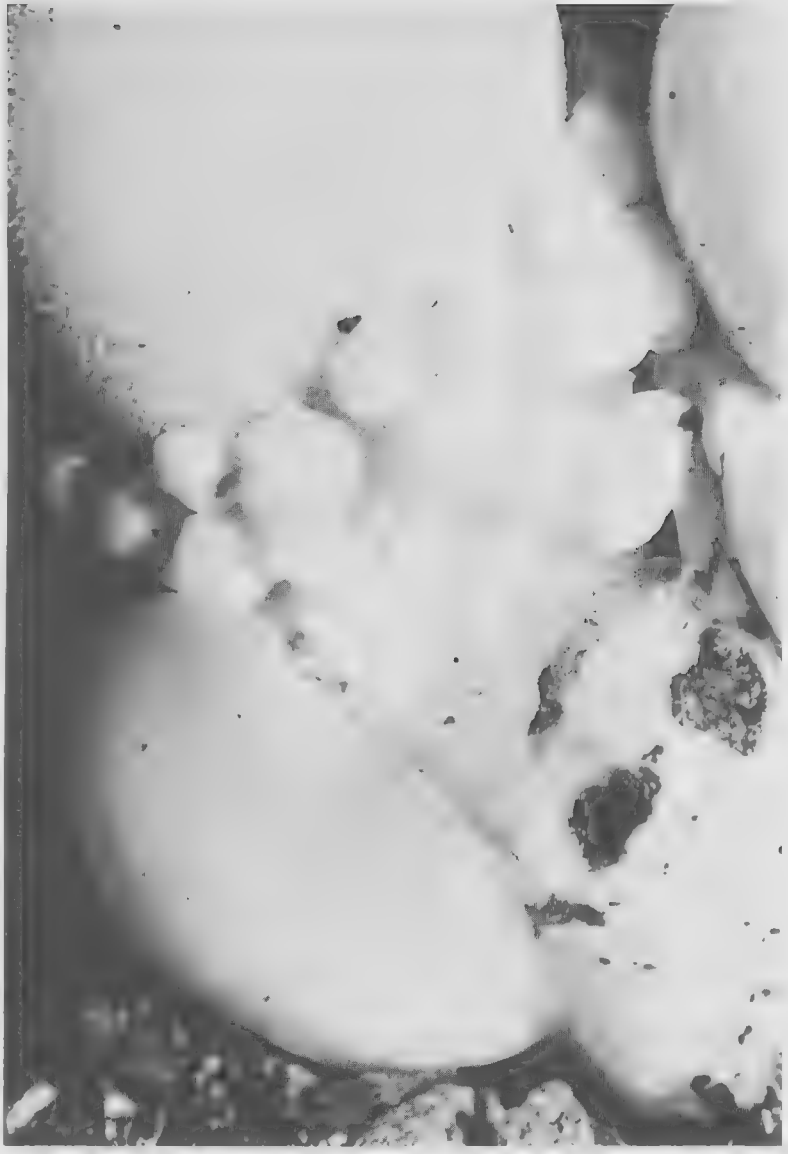
A HANDLIST OF THE BIRDS OF SOUTH AUSTRALIA
By H. T. Condon, Curator of Birds, South Australian Museum. *Published by: The South Australian Ornithological Association.*

This revised and enlarged version of the well-known South Australian Handlist will be produced in a limited edition about mid 1968. As this is virtually a new work, it is anticipated that the demand will be great from many quarters.

To ensure obtaining your copy, it is suggested that you apply to: S.A.O., C/- S. A. Museum, North Terrace, Adelaide, for a special pre-publication price of $2.50 (including postage). The sale price after publication may exceed this amount.

BALANOPHORA FUNGOSA

Photographs and
Story by
BILL and BETTY HINTON



THIS PLANT grows as a parasite on the roots of trees. The flowers on the ball-like top are males, while the outside of the ball is a dense mass of tiny female flowers. A strong smell of iodoform from these plants is believed to come from the flowers.

The specimen photographed was growing about 50 ft. above high tide mark on the edge of the rain-forest, at Clump Point, North Mission Beach.

K. Mair, Director of the Royal Botanic Gardens and National Herbarium of N.S.W., added the following information to this note.

'The family Balanophoraceae which is widespread in the tropics is a most extraordinary group of flowering plants, in that the vegetative body is reduced to fleshy subterranean rhizomes attached by haustoria ("suckers") to the woody roots of the host plant. The only above-ground part is the infloresence.'

NATURE CONSERVATION SYMBOL

The letters roll in with ideas for a conservation symbol for Australia. However we would like as many as possible to obtain a good sample of ideas. Here are some.

Willy Wagtail. Ipswich Brownie Packs.

Spiny anteater or echidna. J. C. Hill of Edmonton, N.S.W.

A waterfall. D. G. Moffitt of Lindfield, N.S.W.

Brolga. D. R. Thies of Hornsby, N.S.W.

Bobtail lizard. Olga Smith of Collinswood, S.A.

Red kangaroo. Joan Inglish of Blackburn, Sth. Vic.

Koala. J. Christensen, Rosewood, Q'ld.

Kangaroo. M. Fennessy of Bacchus Marsh, Vic. and on an anguished note.

A bulldozer rampant on a field of wattles with a background of burning jungle. R. Johnson of Macleod, West Vic.

We will deal with others and the final result in the December issue.

Willy Wagtail on nest

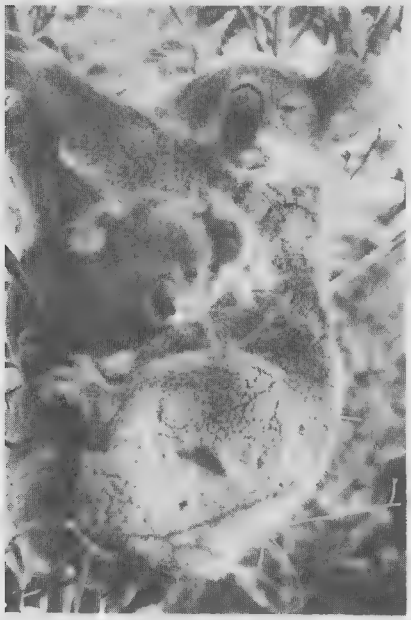
Brolgas, in their natural habitat

CHILDREN'S PAGE

MOTHER AND CHILD

OSPREY AND CHICKS

A pair of nesting ospreys in Scotland attract over 50,000 sightseers each year. In Australia we are lucky that breeding ospreys can be seen along much of our coastline.



KOALA PAIR

The famous "teddy bear" of eastern Australia is not a true bear. It is a marsupial. After spending about eight months in the pouch the baby spends about four more months with its mother before looking after itself.

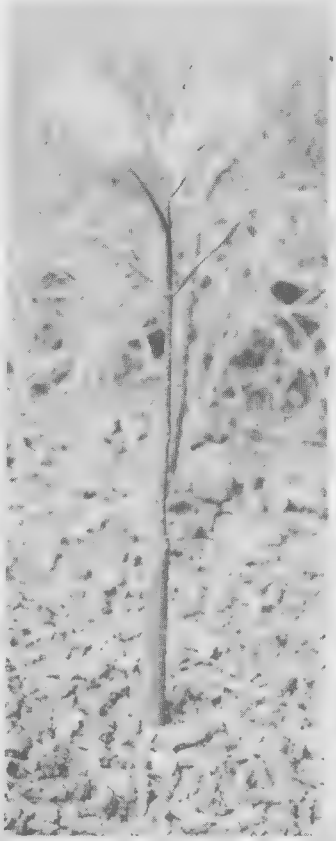
BOAB AND CHILDREN

These baobab or boab trees show a group of young trees growing around the parent tree. Should the parent die, then one of the youngsters will replace it. Normally the young which grow too close to the parent do not survive.

MANGROVE YOUNGSTER

In this species of mangrove tree the seed begins to grow while still attached to the parent plant. When it does fall away from the adult, it is better able to establish itself as the next picture shows.

BEFORE ▼ AFTER ▶

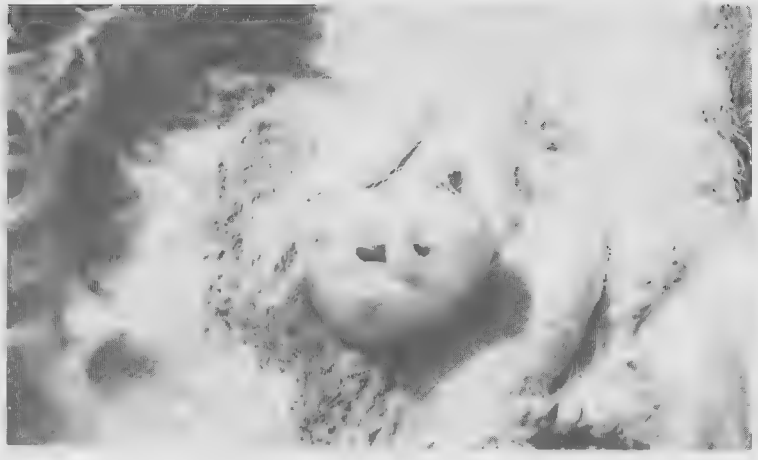


RED-NECKED WALLABY

Even after the joey has left the pouch the baby takes a drink at the mother's milk bar.

LESSER NODDY TERN AND CHICK

These terns nest only on the Abrolhos Islands off the West Australian coast. The nests are placed on the branches of mangrove trees. The parents are so tame they will not fly but can be picked up in the hand by a visitor.

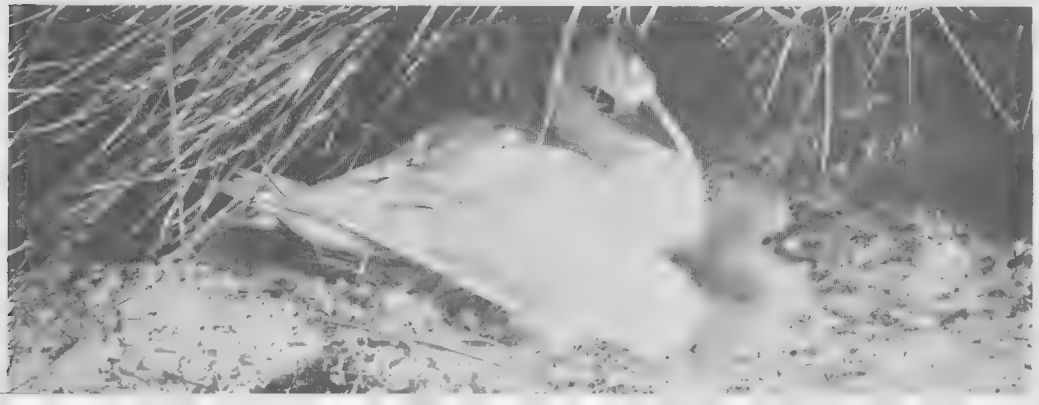


RED KANGAROO JOEY IN THE POUCH

Marsupial babies are born in an embryonic state and are kept snug and warm in the pouch where the teats are placed.

EMU AND CHICKS

Not mother and child but father and child. The mother emu lays the eggs, then father takes over, looking after the chicks often for periods of more than a year.



REDTAILED TROPICBIRD AND CHICK

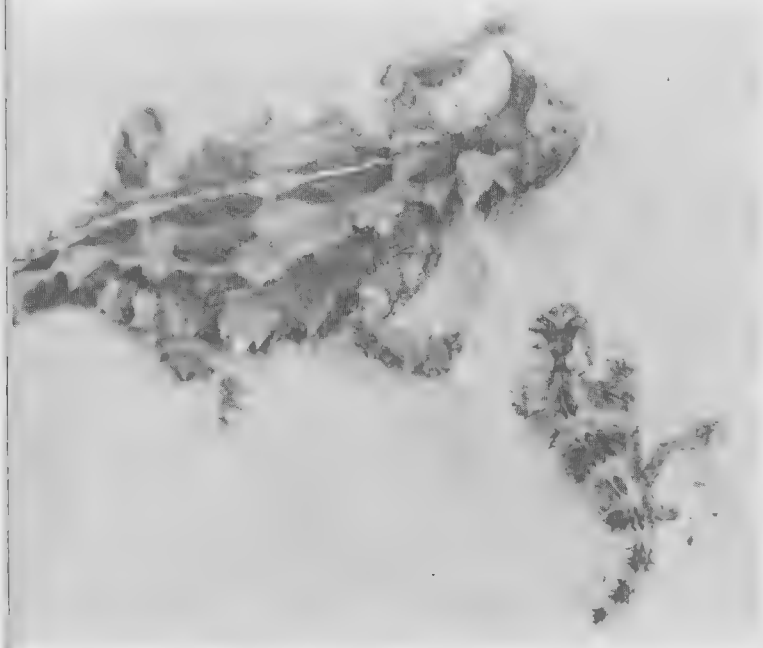
This beautiful seabird has two long red tail feathers which stream behind when the bird is in the air.

BLACK DUCK AND DUCKLINGS

This species is the kind found in freshwater lakes around the coast. This picture was taken at Shenton Park Lake near Perth showing how these ducks will breed in the heart of cities.

MOUNTAIN DEVIL AND LITTLE DEVIL

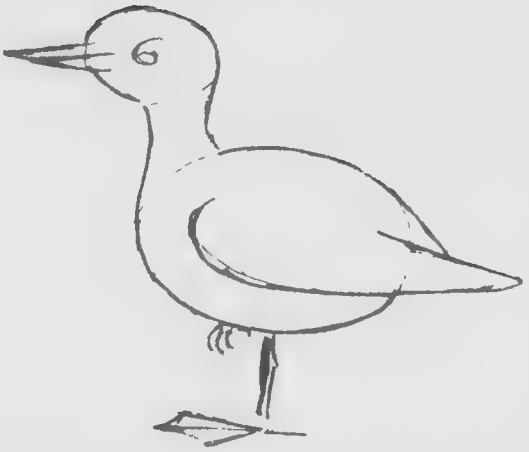
We could not think of any name better than little devil for this young dragon lizard. These mountain or thorny devils feed on black, trail-forming ants. The eggs are laid in a burrow in the soil and under normal conditions mother and child would never meet. This is true of the vast majority of animals. Only in mammals and birds is the normal pattern for the parents to exercise care over the young. There is occasional parental care in the other animals but this is much rarer.



TEACHERS PAGE

Drawings by S. R. White

BIRD STUDY



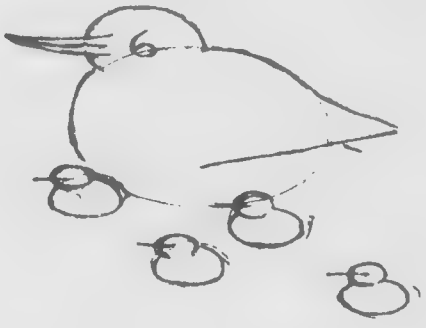
Springtime is birdtime. Here are some suggestions to help bring life into your bird work. The methods, with modification, can be used at any level from kindergarten to secondary.

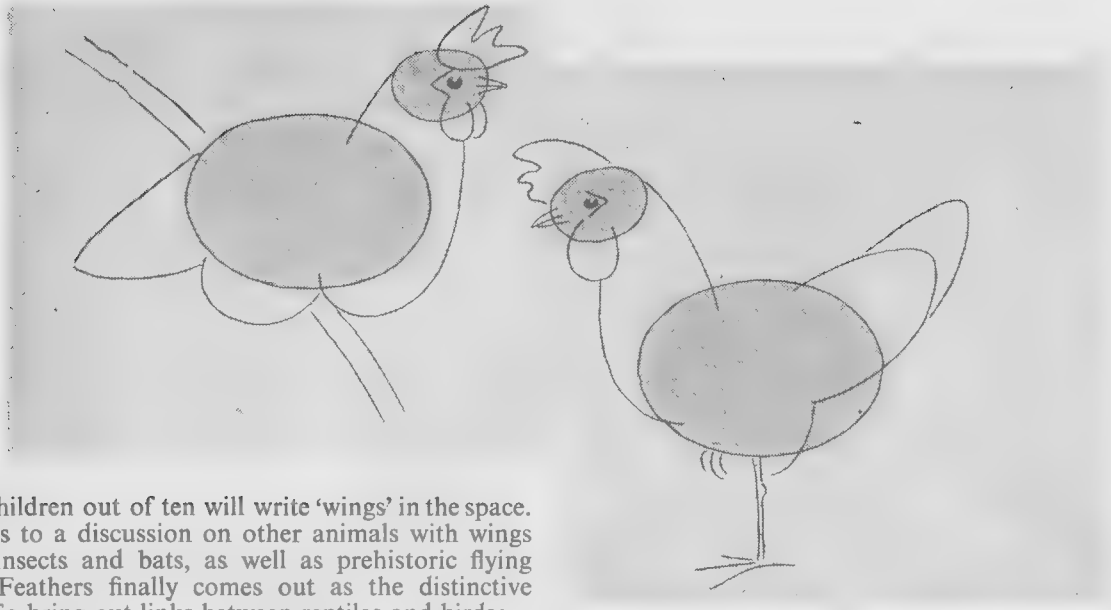
Prepare your material

Too much valuable time is wasted in teaching. This applies to children copying down long sentences into their workbooks. Cyclostyled material with blank spaces for the children to fill in with key words, or key drawings, cuts down writing in the copying sense to a minimum. There can still be space for original writing in terms of the child's own observations. Such cyclostyled material can be pasted into workbooks, or else gathered together at the end of the project and made into a 'book'. The art and craft period can be used to prepare a suitable cover and produce a stylish piece of work with a title, such as 'Birds of my district' or 'Birds of the lake', etc.

The cyclostyled material will obviously be suited to the child's age. Here is a sample sentence:

Birds are the only animals which have .....





Nine children out of ten will write 'wings' in the space. This leads to a discussion on other animals with wings such as insects and bats, as well as prehistoric flying reptiles. Feathers finally comes out as the distinctive feature. To bring out links between reptiles and birds:

Birds have ..... on their legs, and the young are hatched from .....

Birds are warm/cold blooded. Underline the correct word.

This helps with an understanding of the differences and similarities between mammals, birds and reptiles.

Birds have teeth. True/False .....

Other questions depend on the bird being studied.

Room for a sketch should be left. With very young children, the whole outline can be drawn and the children asked to colour this in. With nine-year-olds a guide can be given as shown in the diagram. Older children should be able to draw straight from life.

From Life

Life is the key word. There is little point in obtaining the above information merely by talking. There should be a bird in the classroom so children can feel if it is warmblooded, see its feathers (even examine one with a hand lens) and note whether it has teeth or not.

Having a live bird in the classroom is a very simple matter. Most children have pet birds at home and with a little organisation the child could go home at lunch-time, bring his or her pet in a suitable cage, and take it home that afternoon. The teacher will of course have found out the kind of bird and prepared teaching notes to fit. Obvious birds would be budgerigars, finches, parrots and cockatoos but occasionally magpies, kookaburras and other native species might be brought. Do not neglect domestic ducks and hens. The best bird to start such a study is a hen, an old black hen for preference. These are less flighty than younger birds.

The teacher's table should be cleared and covered with bagging in case of accidents. Children will not be embarrassed by bird-droppings, so long as the teacher is not. By providing a little wheat the method of feeding can be studied. A friend of mine, as a student teacher, gave a lesson with a live hen. It was a sensational success. Later, when he placed the hen in a basket during a mathematics lesson, the bird laid an egg much to the delight of the class. (Whether this was addition or multiplication is an interesting point).

However, it is unlikely that child or teacher ever forgot that particular lesson.

If a pet bird is brought every second week, the alternate weeks can be spent studying birds in the wild—in the school grounds, at a local lake or park, etc. This will give breadth to the study.

HURRY! HURRY!

Complete your sets

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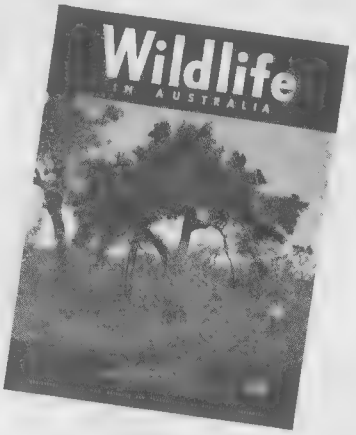

A RARE AGAMID

by PETER ROBSON

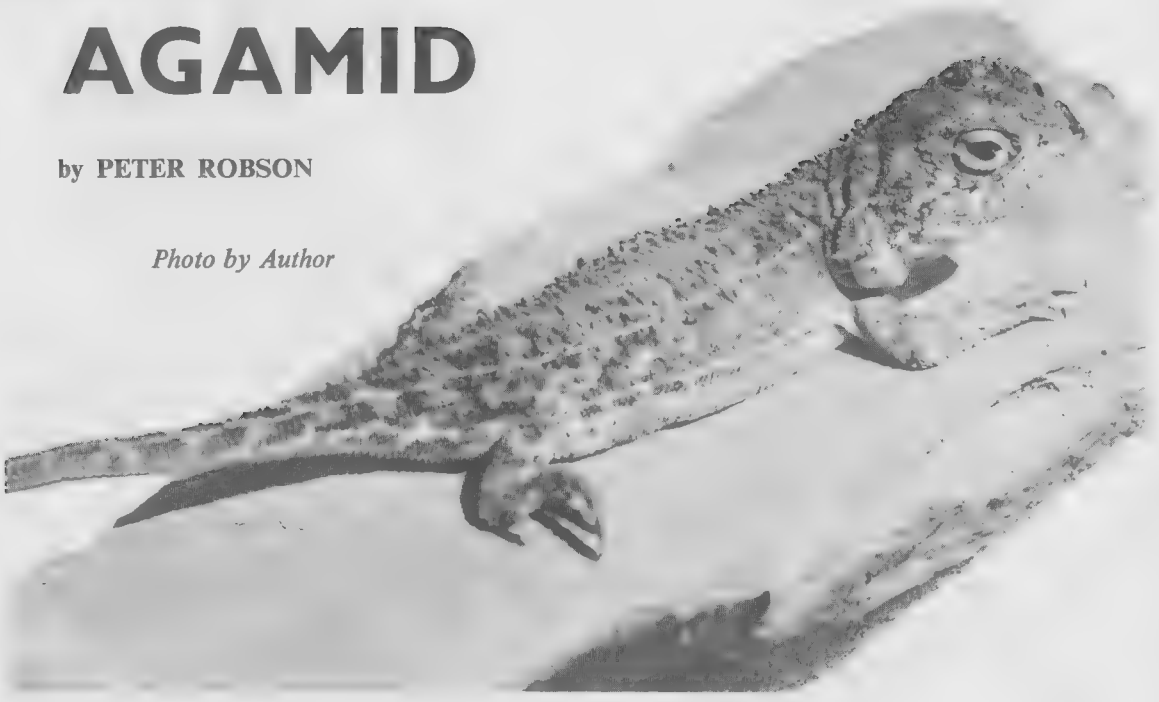

Photo by Author

AUSTRALIA has many weird and wonderful native lizards spread throughout her many varying climates. Perhaps the most wonderful of them all are those in the family *Agamidae*, the dragons.

Two of the most unique of these are to be found in Australia. These are the frilled lizard and the thorny devil. The frilled lizard being found in the far north of Australia, while the thorny devil is to be found in the inland desert areas. Although both these lizards are unique to Australia, neither of them could be classified as being rare. A dragon that can be classed as being rare is a small earless dragon.

A small boy came to me last March and said he had a gecko. When I asked him where he got it, he told me his father had caught it at Rockbank (Victoria), while gathering rocks for a garden. When I finally managed to persuade the boy to bring the lizard to me I could see at once that the lizard was not a gecko, but a member of the family *Agamidae*. The only other thing I could be sure of was that the lizard was earless.

After a few wild guesses at the identification of the lizard I took it to the National Museum of Victoria where it was positively identified as *Tympanocryptis lineata pinguicolla*. This small earless dragon, only 2½ inches long, has now become a family pet living on small insects and pieces of fruit. Like many of the dragons, this one is an exceptionally fast moving species. This I found out when I tried to photograph the lizard on a warm day.

The term earless dragon is used loosely as the lizard is not actually earless. All this means is that there is no external ear or ear opening. What has happened is that the ear openings have become covered by a series of scales, and can only be located by finding the depression in the skin behind the eye.

It appears that very little has been written about this dragon.

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Wanderer reaches the exciting climax of his display. In this picture he is facing the viewer.

MENURA the Lyrebird

IN our last issue we reviewed the new book by Harold Pollock published by Jacaranda Press and selling at $2.95.

Harold has given us a number of his photos from this book and we dipped into the text to come up with some of the fascinating story of his making of the lyrebird film.

'To make a complete life-history film of a bird, one of the first things a wild-life film producer must do is find an occupied nest in a suitable situation. . . . I was introduced to Keith Hindwood who has studied lyrebirds in the field for many years. When he heard my plight Keith smiled, "Come with me on Sunday morning and I think I can show you what you want." After the usual lyrebird nest hunting scramble we suddenly came to a tiny glade beautifully situated beside a little stream which murmured softly over the rocks as it descended in a series of tiny waterfalls. Stout red-barked angophoras and tall eucalypts shaded the glade nearly all day from the winter sun. This was typical lyrebird country, situated not half a mile from one of the busiest arterial roads out of Sydney and here on a stout rock about four feet from the ground I viewed the first lyrebird nest I had ever seen. Cunningly fastened to the rock it was made of stout twigs. The interior was lined with fern-roots and soft grey feathers which the nesting bird had plucked from her thighs. The entrance was at the side. In the bottom of the nest, snuggled among the soft feathers I saw the dark purplish-black single egg. It was about the size of a domestic hen's egg.'

(The normal lyrebird clutch is but a single egg). . . .

'First I should try to tame the nesting bird by feeding her worms first thing every day. The lyrebird's diet consists of worms, insects, small crustaceans and other small animals which live in the earth. . . .'

(Then came the hatching day some six weeks after the egg was laid).

Theresa was so tame that she would jump up and wriggle into the nest under the full blast of my powerful cine light. Here she is, settled in for the night, brooding Junior. She gave up sleeping in the nest with Junior when he was about four weeks old.

When a stranger approached the nest Junior would let out a piercing scream; then Theresa would come rushing to the nest to find out what was troubling him. I could touch the nest, and even lift Junior out, but he would never scream because he knew me so well.

'Theresa stored the worms and grubs she gathered in a pouch of skin beneath her bill. When the pouch was full she was ready to feed her chick. Sometimes she would also have a beak full of wriggling worms. . . .'

(The male in full display).

'. . . On a cleared mound screened by ferns, I saw a lyrebird singing with rare gusto. Suddenly he stopped singing, briskly scratching the damp earth of his mound, vigorously shook his tail, and began to call with an excited whirring note. Then he lifted his great tail and spread it like a silver fan over his head, violently vibrating his tail feathers, it seemed, in time to the whirring call. He moved his feet as he swayed gently from side to side. The plain brown bird had metamorphosed, as if by magic into a creature of entrancing beauty. . . .'

Editorial note.—With the same book goes a record of the call of the lyrebird and other birds of the forest. The film of the lyrebird can be obtained for showing through the Bank of N.S.W. which sponsors these films.

The ultimate in trust between man and bird. It took me six weeks of daily feeding on worms and grubs before Theresa would perch on my knee and feed from my hand.

Young, immature Lyrebird displaying. Note the tail feathers are more like that of the adult female than the male's. The lyrates are short and the filamentary feathers have not yet developed fully.

Encounter with Koala...

BY GEOFF SPENCER

THE OTHER EVENING, whilst returning from a Wildlife Society meeting, we saw, in the headlights of the car, a large and apparently aged koala. He was sitting at the edge of the road. Since we live in bushland, it was no great surprise. Often we meet wallabies, marsupial mice, an occasional fox, and sometimes death adders on the road at night. Due to the staggering toll of wildlife on the road in our area, we were rather concerned, and I decided to coax our friend out of harm's way. I say coax, because a wild koala is not the easiest thing to handle. Being a relative of the possum tribe, they are equipped with formidable teeth. An average koala may weigh in excess of ten pounds and is provided with strong sharp claws for climbing. A koala's claws are capable of penetrating deep into a person's flesh. In contrast to his strong limbs, his body is more delicate. One should never attempt to pick up, or dislodge a koala, by grasping around his waist. Internal injuries may result.

To remove our friend was easier said than done. He was unafraid and did not welcome overtures of friendship. A gentle rub behind the ears was greeted by a throaty growl. This sounds like a cross between the bray of a donkey and the snort of a pig. It can be disconcerting. After giving me a piece of his mind he proceeded to cross the road at a leisurely roll. He stopped to rest about two-thirds of the way across and gave me a haughty stare. After a short wait I decided to help him. I took careful hold of his arms and began to carry him to the side bank. This manoeuvre was greeted with loud protestations and an attempt to claw me with a hind leg. I achieved the move unscathed and my friend turned round and gave me a further baleful look. It was clear he did not appreciate my efforts. Indeed to drive the point home, he proceeded to recross the road, back to the other side. This time he did it unassisted. Koalas may not be able to talk, but I got the message in the look he directed at me as he sat in the gutter to rest. I still had the car motor running and was anxious to see him safely away. It was amid further protests that I lifted the Koala over the high loose bank and we saw him walk indignantly away.

MENURA-the Lyrebird

available from all good booksellers $2·95

The two stars of this book and accompanying record, another in Jacaranda's popular series, are Theresa and Wanderer, a female and male Superb Lyrebird respectively.

Harold Pollock, one of Australia's leading nature photographers, tells in absorbing detail the life history of the Lyrebird.

The 12-inch E.P. record which accompanies the book gives a convincing account of the bird's outstanding powers of mimicry.

Lake Pedder

SOUTH AUSTRALIA

OPERATION WOMBAT

The big news from South Australia was the success of Operation Wombat which attracted attention both throughout Australia and overseas. We are hoping to deal with this appeal in full in a later issue because it has lessons for all of us but here is the story in outline.

The hairynosed wombat, once a widespread species, has rapidly diminished in range since white occupation. There is no national park in Australia where it is protected so The Natural History Society of South Australia decided to take action. Offered 3,000 acres of land on Portee Station, an appeal to raise $18,000 was launched, so successfully that it was oversubscribed by over $3,000, and now more money is being sought to buy another 2,000 acres. A number of individuals played a major part in this campaign and we hope the article to be published will deal with this aspect, yet we can offer now, congratulations to all those concerned with this conservation success. Not only with the success but with the skill shown in mounting the campaign.

HAMBIDGE NATIONAL PARK

A threat to remove 40,000 acres from the 93,865 acres of this park in the Eyre Peninsula mallee country has alarmed conservationists and the battle for its defence has begun. This attempt by the Government is a hangover from the bad old days when land useless for anything else was made a national park until some 'better' use could be found for it. Today, the more mature communities know that the best use for a national park is to keep it as a national park. Not only for its economic return in terms of tourism or scientific value, but for the enjoyment of this and future generations.

A.C.T.

The Rip Van Winkle of conservation in Australia is stirring from its long sleep. A meeting of Government parties was assured by the Prime Minister, Mr Gorton, that the Government would look into the matter of wildlife conservation. The usual red herring was dragged across the trail in the form that conservation was basically a State matter, conveniently neglecting the facts that there is no national park in the A.C.T., Jervis Bay, Norfolk Island or the numerous islands under Federal control; in the Northern Territory the national park service struggles along with inadequate funds and a lack of trained personnel.

In matters like waterfowl, kangaroo, crocodile and turtle conservation where several States are involved, the quickest way to get action is for the Federal Government to organise conferences. There are dozens of other fields in which the Federal Government could take action. One encouraging step forward has been taken with the move to establish a national institute for research into rangeland problems.

TASMANIA

The Tasmanian Conservation Trust has been formed. Further information can be obtained from the Hon. Secretary, Miss A. Damgaard, 1 Braeside Crescent, Sandy Bay, 7005. We feel this is a further step forward in conservation and urge all interested to give the Trust support.

Largely through the efforts of our Federal Senate member, A. J. Mulvihill, sheep grazing will come to an end on several islands which are important feeding grounds for the Cape Barren Goose.

VICTORIA

The interesting news has been the success of the koala survey. Modelled on the survey carried out by the National Parks and Wildlife Service of New South Wales, the idea was continued by the Wildlife Preservation Society of Queensland, then taken up by the Native Fauna Conservation Society of Victoria. Basically, the idea was to send a questionnaire to all state school pupils asking a range of questions about the koala. Samples of the food tree were obtained so these could be identified. The full story of these koala surveys will be given in a later article, so we will say no more except to congratulate all concerned on a thorough job. These surveys by children on particular species have been carried out over the last ten years or so in Western Australia through the Gould League. We hope all States will look into methods of engaging children in a nature conservation exercise.

More welcome news is the establishment of a wildlife research laboratory where work on our fauna will be carried out. The effect of pesticides on wildlife will be one of the many areas of study.

GLENELG NATIONAL PARK

From the Western Victorian Conservation Committee we received a brochure on proposals for a major national park near Portland. It is a model of thoroughness and how to approach this kind of problem. Some years before an approach had been made for 48,000 acres of the Glenelg River area to be set aside as a national park. Now the Government is proposing to clear much of this interesting bushland to plant pines and for farming purposes. As a sop they are offering a small section as a park. Now over to the report for some quotations.

> 'Pines. Generally it is considered the area is marginal for pines.
> The greatest scope for increasing agricultural production in south-western Victoria is not in the limited undeveloped areas . . . but in the old established areas where the greater part can still be improved to the level of the best properties.' . . . (Quotation from Gibbon and Downs).

The value of tourism to Portland could be approaching $2,000,000.

When Portland reaches the status of a large provincial city with a population of 100,000 or 200,000 where will these bush areas be found if we do not set them aside now.

Victoria's 380,000 acres for all National Parks or 0.6 per cent of its total area is paltry when compared to these figures (comparisons with other States, none of which approach the 5 per cent suggested as a suitable figure of a country's area to be set aside for national parks).

We ask is this an appropriate time to open up more farmlands considering the fact that more than half the privately held land in the Portland Shire is still undeveloped?

Australians owe it to themselves, to their children and to their children's children to ensure that the over-hasty alienation of scenic and recreational land, now so deeply regretted in other countries does not occur here.

WESTERN AUSTRALIA

A proposal to alienate a large area of Kings Park for other purposes has been rejected by the Government.

Kings Park is about one thousand acres in area and much of it is still coastal bushland. With good management this could be held in excellent condition as a sample of the kind of country the pioneers saw when they first arrived at the Swan River settlement.

CONSERVATION SOCIETIES IN WESTERN AUSTRALIA

From time to time we will gives names and addresses of State societies, so interested readers can get in touch with the society which interests them.

Western Australia Naturalists Club, 35 Merriwa Street, Nedlands.

Tree Society of Western Australia, 258 Mill Point Road, South Perth.

National Trust of Aust. (W.A.), Vapech House, 638 Murray Street, Perth.

Gould League of Western Australia, Correspondence School, Perth.

Royal Society of Western Australia, Museum, Beaufort Street, Perth.

Western Australian Wildflower Growers Society, 8 Surrey Street, Dianella.

Western Australia Historical Society, 49 Broadway, Nedlands.

And from DAVID HUTCHISON, *another conservation battle.*

About six miles south-west of Perth, near the suburb of Claremont, lies Lake Claremont, or Butler's Swamp as it once was known. Until 'sanitary land-fill' started a few years ago the high-water mark enclosed an area of about 60 acres. According to a paper by Evans and Sherlock (*W.A. Nauralist*, Vol. 2, 7) there are at least five theories to account for the formation of the swamp and the rapid increase in water level in the past 30 years.

Pink myrtle in Kings Park.

Kings Park Road with Kings Park beyond. These trees were cut down in the 'thirties with a promise a new avenue would be planted; a promise still to be carried out.

At one time much of the area was cultivated and in the depressions were dense thickets of paper-bark. With the rise in water-level most of the paper-barks have died and once formed a major night-roosting area for cormorants from the wide estuary of the Swan River. One of my earliest childhood memories is of the whip-lash flocks of cormorants, hundreds to a flock, winding across the sunset sky to the swamp. Because of the cormorant population the water of the swamp had a high nutrient level and supported a large population of water fowl, including many of the less common species such as pink-eared ducks.

Some year ago the local Council commissioned a town-planner to design a comprehensive scheme for the development of the lake as a recreation centre, picnic area and wildlife reserve. This plan was imaginative and included recreation facilities for all age-groups and catered for those who wished to pursue balls of various shapes and sizes with or without various implements, for family picnics, for quieter recreation in the presence of nature, and for some of the arts in a tree-surrounded amphitheatre. The last item disappeared under the bitumen of a drive-in theatre. The excavations for this theatre resulted in sand being bulldozed over the slopes of the attractive, wooded knoll on the north-west side. A golf-course, originally planned for nine holes, and now projected for twenty-seven holes, and large blocks of flats on the eastern side of the Lake make evident that the Council has now ignored the original plan. Some local residents began a campaign to save some of the original scheme. Last year a group of these residents, together with representatives of schools, the Naturalists' Club, Tree Society and other interested groups, formed a Lake Claremont Defence Committee.

Our first objective was to halt further land-fill for the golf-course, which would have completely encircled the Lake except for the area already alienated for the purpose of a school's playing fields. Although we would have liked to save more, we proposed, as a reasonable

THE ROO SHOOTER

(With apologies to Lewis Carroll)

"I weep for you," the Shooter said
"I deeply sympathise."
With sobs and tears he soon shot down
'Roos of the larger size,
And then attacked the does and joes
Tears streaming from his eyes.

"O Kangas," said the Canning Firm,
"We've made a tidy sum;
Will you be hopping 'round again?"
But answer came there none —
And this was scarcely odd, because
They'd killed off every one.

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compromise that the golf-course end in the north-west corner, leaving the knoll which extends from there along the western side to be developed as a flora reserve. We, with the aid of Mr Gordon Smith, a University botanist, recommended varieties of plants indigenous to the habitat which could be replanted to restore the area of the knoll and its contiguous foreshore. The Council recently began a prolonged consideration of the revised golf-course plan and invited several people, including Dr D. L. Serventy, the ornithologist (CSIRO) and Dr J. Knight, president of the Naturalists Club), to advise them. This, of course, has been suggested long before to the Council. At this date the battle is far from won and the Defence Committee has decided to intensify its campaign to save something from the wreck.

NEW SOUTH WALES

Operation Noah. Due to the energy and compassion of a father and son team, Mr Alan Mans and his father of Tumut, many native animals were rescued from drowning in the rising waters of the Blowering Dam. Their initial efforts resulted in Government action to make sure no more animals drowned as the rising waters flooded their small island homes.

Colong Caves Reserve still exercises the attention of conservationists. A Cabinet decision to allow the Portland Cement Company to mine limestone in the area which was to have been part of a large national park is unfortunate. The National Parks and Wildlife Service opposed the idea but were over-ruled. The worst aspect is that the Government have refused conservationists the opportunity of an independent assessment of the Company's claims in a Warden's Court.

QUEENSLAND

New legislation to protect anthropological, ethnological and prehistoric Aboriginal relics has come into force. According to the Aboriginal and Island Affairs Minister, Mr Bjelke-Petersen, this is the most advanced in Australia. An impressive advisory committee has been set up under the terms of the new Act. It is good to see this official interest in the relics of our past.

A party of private citizens representative of The Australian Conservation Foundation, National Parks Association of Queensland, Queensland Naturalists Club and The Wildlife Preservation Society of Queensland together with a botanist, zoologist and ecologist and accompanied by Mr D. Sherrington, M.L.A., member for Salisbury, made a visit on the weekend 14–16 July to the Southwood area 20 miles west of Moonie to investigate an area of brigalow country which local residents claim to be the last remaining stand of typical brigalow on melon-holey black soils in the district. The area is 17,300 acres approximately.

A proposal has been put to the Lands Department that the area be set aside as a national park.

Because of the intense local interest in the project, the party is visiting the area so that expert knowledge and advice can be gained to reinforce the case for its preservation.

A complete scientific report of the findings will be made available to the Lands Minister to assist him in his investigations.

Cape Barren geese and gosling on David Fleay's front lawn at West Burleigh. Or at least what the family left of it in the process of growing up.

ALONG THE NATURE TRAIL

WITH THE EDITOR

New Guinea Wildlife

From M. C. DOWNES, *animal ecologist with the Veterinary Laboratory, Dept. of Agriculture, Stock and Fisheries, Kila Killa, Konedobu, Papua.*

'I am in process of establishing a wildlife laboratory for the above Department and I need large photographs or prints of New Guinea wildlife suitable for display on the laboratory walls. There are a great many opportunities in the field of wildlife conservation in the Territory and many problems to overcome. The establishment of the wildlife ecology laboratory is a major step and I wish to make the centre as effective as possible. Large illustrations of the wildlife would make a significant contribution at this stage.'

Slaughter of the Innocents

ON THE ROADS

From Mr S. Butler of Dalby comes a plea to stop the slaughter of our wildlife on roads. He stresses that a little care and a judicious blowing of the horn could warn birds of danger.

Most drivers always do try to warn animals of danger. Swerving to avoid animals could be dangerous.

ON THE FARMS

Travellers in many parts of Australia are sickened by the spectacle of dead wedgetails strung up on fences. From a number of readers—one from Tonks Camp near Georgetown, a Mrs C. Hamory of O'Connor, A.C.T., and another writer came pleas for action to save the wedgetail. Research is going on at present and we hope from this we will be able to make another approach to State Governments to have the bird protected.

At present the eagle is protected in Tasmania but not on the mainland. Research has shown that in many areas, of the twenty-five per cent of lambs which die, less than five per cent die from attacks by predators. The greater number die from mis-mothering. In other words eagles, foxes, ravens and the like only kill a small proportion. If we weigh these deaths against the pressure on rabbit populations by the same animals, we might find the balance sheet favours the wedgetail. Perhaps the farmer who shoots eagles is shooting a good friend. As soon as some research results come to hand, we will take action.

Science becoming unpopular

A recent news item stressed the alarm being felt in Great Britain at the drift away from science among students. It stresses the obvious remedy is to make the subject more attractive at school.

One of the problems in Australia is that because children are tested by examinations set outside the school system, children tend to be taught 'cookbook science' with the emphasis on remembering what the book said, rather than exploring real problems. Natural history, of all the sciences, does seem to offer far more exciting possibilities for teachers than most other fields. Any naturalist taking a walk in his garden, or in the bush or along the seashore strikes problem after problem to which he has no answer. Our environment is a living textbook, chockfull of educative material. What we need are teachers trained how to use it.

A Plea from America

From D. H. COONEY, 5523 *West Burnham Street, West Allis, Wisconsin, U.S.A.*, 53219, comes a plea for help. He wants to give lectures on Australian wildlife and its conservation but needs slides. Any reader who would be willing to send copies of suitable slides such as mound-building birds, parrots, cockatoos and marsupials should contact Mr Cooney at the above address. He will pay any reasonable amount for copies of the same.

Bird notes from Rosewood

Jim Christensen of Rosewood in Queensland writes:

> 'A pale-headed rosella flew up from an old hollow post. I investigated and heard cheepings coming from it. I shone a torch and found an adult bird in the bottom of the hollow. The bottom had a diameter of about 15 inches. When the parent bird shifted position I was able to see the nest. It was a shallow depression, partly hidden by an overhanging piece of wood. It contained two down-covered, cream chicks and four eggs. About ten days later the nest was deserted and all that remained was a blue feather and some pieces of egg shell. I hope the young ones joined the group of rosellas at present on our property.
>
> Is the blue wren a known mimic? I have heard the male mimicking a mistletoe bird on several occasions.'

Alec Chisholm, the authority on this subject, had not heard of mimicry in the blue wren group. Perhaps other readers might like to send any information they have on this subject.

Just outside the sanctuary where the eagles breed they are slaughtered by sheep-conscious graziers. There is no justice.
Photo: Col Allison.

Three Sisters, Blue Mountains, N.S.W.

NATURE PROTECTION IN EUROPE

by Dr L. WEBB

TOMORROW MAY BE TOO LATE

IN this dramatic phrase the World Wildlife Fund summed up the problems of nature conservation. In Australia it has been stated more broadly as 'what we manage to save in the next ten years, is all we will be able to save.'

Both statements emphasise

The frightening rapidity with which wildlife—plants and animals, can disappear.

Australian conservationists in their never ending task of saving samples of our wildlife for the enjoyment of this and future generations, need facts, more facts and still more facts.

In this book distinguished conservationist Len Webb has made a substantial contribution. Most of us are aware of the strength of the conservation movement in North America. We know something of what is being done in Great Britain. Europe is for most of us a closed book. Dr Webb has helped open the pages for us.

Naturalists know of his work through his writings, particularly on problems of the rain forest and its conservation. He is a foundation member of the Australian Conservation Foundation and active in the work of the Wildlife Preservation Society of Queensland.

When we first read this manuscript we realised it was too important to be produced merely as a cyclostyled report with a limited circulation. It is for that reason the Wildlife Preservation Societies of Australia are endeavouring to organise mass support among conservation societies throughout Australia, first to have the report printed, then to have it distributed where it will do the most good.

We hope this will be the start of similar publishing activities so when tomorrow does come, it will not be too late and Australian wildlife will rest secure in a web of well managed reserves, covering all the major habitats in this country of ours.

Any individual or society which would like to support this project can send us a subsidy. Books to the value of the subsidy will be supplied when printed. We estimate the cost to be about 25 cents a copy.

A CUCKOO IN THE NEST

Here is a picture story which almost needs no words. However it does need a beginning. The story started when a female bronze cuckoo laid its egg among the eggs of the rightful owner of the nest, a red-capped robin.

We put the egg back six times and six times the baby cuckoo tossed it out again. On the final toss the egg cracked and we left the baby cuckoo in possession. This is all part of a natural process. It is not murder either, because cuckoo and robin are different species.

The female redcapped robin stirs uneasily

Somethings' moving!

How extraordinary! The egg's rising

The villain of the piece. The newly hatched baby cuckoo has the egg on its back and is backing towards the nest rim

Over and out!

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***Write*—HAROLD J. POLLOCK**

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TELEVISION

NATURE WALKABOUT

Victorian and New South Wales viewers can see a natural history programme 'Nature Walkabout' on Channel 9 at 11.30 am each Sunday morning. This is the natural history story of the travels of the Editor and his family around northern Australia.

Also on Sunday mornings at 10.30 am the ABC programme *On the Inside* has fortnightly natural history segments by the Editor. This series is shown on every ABC station throughout Australia.

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